

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A transmitter comprising:

~~a quadrature modulation means for inputting unit which~~
inputs an in-phase component and a quadrature component of an input modulation signal and performing quadrature modulation;

~~a variable gain amplification means for amplifying~~
unit which amplifies output of the quadrature modulation ~~means unit~~ with a gain being controlled based on a gain control signal; and

~~a power amplification means for performing unit which~~
performs power amplification of output of the variable gain amplification ~~means unit~~,

wherein the power amplification ~~means unit~~ has a linear mode for performing power amplification using a linear operation region in an input/output power characteristic and a saturation mode for performing power amplification using a saturation operation region in the input/output power characteristic, and

wherein, if transmission output power is equal to or greater than a predetermined value, the output level of the variable gain amplification ~~means unit~~ is adjusted, the

power amplification—~~means~~ unit is operated in the saturation mode, and a transmission output control signal amplitude-modulated based on an amplitude component of the input modulation signal is input to an output control input terminal of the power amplification—~~means~~ unit for performing polar coordinate modulation; if the transmission output power is less than the predetermined value, the output level of the variable gain amplification—~~means~~ unit is adjusted, the power amplification—~~means~~ unit is operated in the linear mode, and a transmission output control signal of a predetermined level responsive to the transmission output power is input to the output control input terminal for performing linear amplification.

Claim 2 (currently amended): The transmitter according to claim 1,

wherein, if the transmission output power is at the maximum output level or in the proximity thereof, the power amplification—~~means~~ unit performs the polar coordinate modulation and if the transmission output power is smaller than the maximum output level or the proximity thereof, the power amplification—~~means~~ unit performs the linear amplification.

Claim 3 (currently amended): The transmitter according to claim 1—~~or 2~~,

wherein the power amplification~~means~~unit comprises a power supply terminal used as the output control input terminal, and

wherein the transmitter further comprises a power supply driver for increasing the current capacity of the signal of the predetermined level or the signal amplitude-modulated based on the amplitude component of the input modulation signal and supplying power to the power supply terminal as the transmission output control signal.

Claim 4 (currently amended): The transmitter according to claim 1~~or 2~~,

wherein the power amplification~~means~~unit comprises: a power supply terminal to which fixed power supply is input; and

an amplification circuit bias terminal used as the output control input terminal to which the transmission output control signal is input.

Claim 5 (currently amended): The transmitter according to ~~any one of claims 1 to 4~~ claim 1, further comprising a transmission output control signal input section for inputting the transmission output control signal,

wherein the transmission output control signal input section comprises a DA converter for converting a digital signal into an analog signal, and

wherein the DA converter can change an operation clock and has an operation clock switch function for operating with a higher operation clock than that when the linear amplification is performed only when polar coordinate modulation is performed in the power amplification—~~means~~ unit.

Claim 6 (currently amended): The transmitter according to claim 3—~~or 5~~,

wherein an input section of the power supply driver comprises an operational amplifier for waveform shaping, and

wherein the operational amplifier can change an operation current and has an operation current switch function for increasing the operation current as compared with that when the linear amplification is performed only when polar coordinate modulation is performed in the power amplification—~~means~~ unit.

Claim 7 (currently amended): The transmitter according to claim 3—~~or 5~~,

wherein the power supply driver is a liner regulator.

Claim 8 (currently amended): The transmitter according to claim 3 ~~or 5~~,

wherein the power supply driver is a switching regulator.

Claim 9 (currently amended): The transmitter according to claim 3 ~~or 5~~,

wherein the power supply driver comprises:

an amplitude slice ~~means for slicing~~ unit which slices the transmission output control signal at stepwise different voltage levels;

a plurality of switching regulators for converting the power supply voltage into voltages of stepwise different values; and

a switch group for selecting any one of the output voltages of the plurality of switching regulators.

Claim 10 (currently amended): The transmitter according to ~~any one of claims 1 to 9~~ claim 1, further comprising:

a demodulation section for demodulating output of the power amplification ~~means~~ unit; and

a control section for adjusting the timing of amplitude modulation when polar coordinate modulation is performed in the power amplification ~~means~~ unit based on

information of a demodulation signal provided by the demodulation section.

Claim 11 (currently amended): A wireless communication apparatus comprising a transmitter as claimed ~~in any one of claims 1 to 10~~ claim 1.